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ABSTRACT

This paper reports on the application of a token economy approach to increase on-task behavior and decrease inappropriate "call-outs" of nine seventh and eighth grade Caucasian male students in a self-containted emotional support classroom. The program included a behavioral contract, token economy "bucks" kept in a classroom bank, and a list of 12 possible purchases. Subjects began each day with 10 bucks of credit which they could lose by inappropriate call-outs or other classroom misbehavior. Comparison of baseline and intervention (after 15 days) indicated significant improvements in behavior, which were maintained during a fading period. The students liked the token economy system. (DB)

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ED 381 947

The Effects of a Token Economy System on the Inappropriate Verbalizations of Emotional Support Students

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Education 477
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December 12, 1994

EC 303893

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Acknowledgment

This research would not have been possible without the cooperation of both students and teacher. The idea behind this project was originated by Mrs. Kathleen Butler, Upper Moreland Middle School.

Introduction

Token Economy is a behavior modification program that employs a variety of reinforcers that encourage students to change their own behavior. "Token Reinforcement procedures in classrooms have led to clear increases in both academic and appropriate social behaviors" (Drabman, 1973, p. 10). Subjects in this study were familiar with a Token Economy System in that a version of it was employed last year in the same classroom with the same teacher. This is one reason Token Economy was chosen over other behavior modification programs. Also, Token Economy provided structure yet choices for the subjects in this emotional support classroom. A response cost procedure was also used in this study in that students lost points for undesirable behavior.

Observation as well as discussion with teacher and aide determined subjects to be highly distracted. Subjects needed to be continuously stopped, corrected, and reinforced. Maximum learning time was jeopardized. Grades were not what they should have been. Subjects in this class were clearly having problems socially which was affecting their academic behavior. Subjects were displaying inappropriate classroom behavior stemming from inappropriate verbalizations during class ranging from profanity to off-task discussion and behavior which created a chain reaction causing out of seat behavior and physical violence among other unacceptable behaviors.

Methods

Subjects

Subjects consisted of nine seventh and eighth grade Caucasian male students ranging in ages from eleven to fifteen. (Statistics on one subject were inconclusive due to his extended absence in which he was removed from the school). Subjects spent part of the day in a self-contained emotional support classroom and the remaining time in mainstreamed courses, which is a school goal. There are six special education classrooms in the school, one is part of the Intermediary Unit of Montgomery County in Pennsylvania. Subjects IQ's range from 90 to 130 with a mean of 110. Their functioning levels range from fourth to ninth grade in math ability and third to tenth grade in reading ability. Mental ages range from eight years, zero months to fifteen years, zero months with a mean of eleven years, six months.

Subjects suffer from visual and speech problems and attend in and out of school counseling. Subjects are treated with Ritalin and Tofranil (which is an antidepressant). Subjects were selected on the basis that each displayed unacceptable classroom behavior resulting from inappropriate verbalizations that developed into name calling, physical violence, and out of seat behavior causing poor academic achievement as a result. Total classroom involvement was planned so as not to single anyone for individual attention. "When teachers are hesitant to administer reinforcers to only one student because of the possibility of negative reactions from classmates, group contingencies may be an effective way to reinforce appropriate

behavior" (Schoen et al., 1991, p. 2). Prior interventions included edible rewards for good behavior and the Token Economy System used in the previous year for finished school work.

Setting

Research occurred at a Philadelphia Suburban (primarily Caucasian) middle school educating 750 students in sixth, seventh, and eighth grade. Behavior modification occurred during sixth period (1:15 - 2:15) science class in a self-contained emotional support classroom. Once the intervention was implemented, subjects sat in assigned seats in a semicircle in the front of the classroom facing the blackboard. Teacher and aide were also present in the room and upon implementation of intervention, researcher was located in the center of the semicircle. Subjects received academic instruction using a seventh grade science textbook which was designed for special education students. A variety of teaching techniques such as Direct and Indirect Instruction, Discovery Learning, and Copperative Learning as well as others were used.

Procedure

Research design employed was "AB" design. Behavior modification was implemented only four days a week, excluding Wednesdays. A five session baseline was taken with two Reliability checks by the aide using a frequency count (tally) system and the attached sheet (see Figure A). Also, subjects

had two "practice sessions" after baseline. During this time, the researcher modeled and the subjects role-played making them aware of what would cause them to lose "bucks" (tokens). Teacher kept a baseline during this using a "clicker" to signify each time the inappropriate behavior was demonstrated. This was to signal both researcher and subjects. "The behavior(s) to be changed are initially described and demonstrated by the teacher and then continuously modeled by peers" (Salend, 1992, p. 204).

Actual intervention was implemented over fifteen sessions. Intervention began by changing student's seating, however, seating arrangement was left in a semicircle (see Figure B). Academic/Curricular changes included active rather then passive learning. Experiments, hands-on activities, worksheets, outside activities, projects, as well as the "question of the day" were all new additions once the intervention began. (The question of the day consisted of each student answering a question directed to them and receiving a point for a correct answer. The student with the most points at the end of the week received a piece of candy). "Direct Reinforcement of academic performance seemed to have a corollary effect with on task behavior" (Gaughan, 1989, p. 90). Reliability checks were done by the aide on two separate occasions. The same baseline format (Figure A) was used. Materials employed consisted of a behavior contract (Figure C) which was posted and handed out. Inappropriate Verbalizations (call-outs) that would merit the loss of bucks was posted and also handed out (Figure D). Subjects were issued

"In Miss Stover We Trust" green paper money which was labeled from $ 1.00 to $10.00 depending on what was earned daily. This money was housed in "The Bank" in corresponding subjects' pockets to ensure that stealing or loss of money would not be an issue. A bar graph was also posted which allowed researcher to use an immediate feedback technique and allowed subjects to view their earnings on a daily basis. Due to awards that could be earned, extension of intervention from ten to fifteen days was done. Twelve possible purchases could be made using bucks. These were posted and handed out to each subject (Figure E).

Subjects were given time before each session to "get out" all of their talk-outs and energy. Also, subjects were given verbal reminders as the tally was being taken. Each subject began each day with ten bucks. Subjects could also end each day with ten bucks or lose bucks for each inappropriate verbalizations made by them. Frequency count was kept on each subject during each day of intervention which lasted an average of forty minutes per session, 1:15 to 1:55 P.M. (see Figure A). From 1:55 to 2:15 P.M., a total was taken, subjects were called up and given bucks that were earned for the day, and both subject and researcher signed and dated their bucks which were then placed in The Bank. At this time, subjects also redeemed their bucks for edible and/or nonedible rewards. Subjects were responsible for making up any and all work missed during their reward time, however, it was usually independent work.

Fading was implemented over a five session period using

the same tally format (see Figure A). Maximum earning potential was as follows: day five, eight bucks; day four, five bucks; day three, three bucks; day two, two bucks; day one, one buck. On the final day, subjects purchased enough rewards to empty their accounts with The Bank.

Results

During baseline, subjects' inappropriate verbalizations ranged from a total of 17 to 32 daily with a mean of 28.4 (refer to Figure 1 graph). Individual subjects were as follows: Jeff ranged from 7 to 10 with a mean of 8 (excluding one absence), Todd ranged from 0 to 1 with a mean of 0.4, Scott ranged from 0 to 6 with a mean of 3.6, Tom ranged from 1 to 4 with a mean of 2.4, Mike ranged from 1 to 4 with a mean of 3, Karl ranged from 1 to 3 with a mean of 2 (excluding one absence), Art ranged from 0 to 2 with a mean of 1.2, Andrew ranged from 0 to 2 with a mean of 0.8, and Ben ranged from 8 to 17 with a mean of 11.25 (excluding one absence). Variability is due to amount received on each day (refer to Figure 2 graphs).

During Intervention, subjects inappropriate verbalizations dropped and ranged from a total of 0 to 8 with a mean of 3.13 (refer to Figure 1 graph). Individual subjects were as follows: Jeff ranged from 0 to 4 with a mean of .769, (excluding two absences), Todd ranged from 0 to 2 with a mean of .2, Scott ranged from 0 to 2 with a range of .66 (excluding three absences), Tom ranged from 0 to 1 with a mean of .13, Mike ranged from 0 to 4 with a mean of .92 (excluding two absences), Karl

ranged from 0 to 1 with a mean of .357 (excluding one absence), Art ranged from 0 to 1 with a mean of .14 (excluding one absence), Andrew ranged from 0 to 1 with a mean of .07 (excluding one absence), and Ben ranged from 0 to 2 with a mean of 1 (excluding eleven absences, refer to Figure 2 graphs).

During fading, subjects inappropriate verbalizations ranged from a total of 0 to 6 daily with a mean of 2.5 (refer to Figure 1 graph). Individual subjects were as follows: Todd, Tom, Karl, Art, and Andrew remained at zero all five sessions of fading, Jeff ranged from 0 to 3 with a mean of 0.8, Scott ranged from 0 to 2 with a mean of 0.8, Mike ranged from 0 to 1 with a mean of 0.6, and no fading tally could be taken on Ben (refer to Figure 2 graphs).

Reliability checks were taken by aide six times, two per phase. Reliability results were as follows: 92% and 98% during baseline on sessions two and four respectively, 90% and 91% during intervention on sessions eleven and seventeen respectively, 93% and 92% during fading on sessions twenty-two and twenty-four respectively (refer to Figure 1 and 2 graphs).

Discussion

The results of this study demonstrated that Token Economy Systems can successfully increase on task behavior by decreasing inappropriate verbalizations of emotional support students. Also, the use of a contingency contract and the Token Economy was instrumental in that it helped in "securing student involvement, identifying problem behavior, evaluating

inappropriate behavior, planning new behavior, gaining commitment, accepting no excuses, and avoiding punishment" all of which appeared to be valuable in this project (Tauber, 1990, p. 130).

Students found the rewards to be motivating. Surprisingly, many students chose not to purchase larger rewards but chose smaller ones that they could buy immediately. This is appropriate behavior for these students since their academic attention spans are short. It is understandable that their pleasure attention spans would also be short; they need the immediate satisfaction. Most students chose edible rewards including soda and candy. Two subjects chose detention passes on two separate occasions. Subjects did not choose animal erasers, free time, pencils, and/or time to listen to a Walkman. These rewards may be eliminated if study was to be performed again. Also, subject recommendation included bathroom and homework passes if study was to be conducted again. Subjects should be involved in determining their own rewards since they were eager to add input after the fact.

Subjects liked the Token Economy System. It was structured, however, it gave subjects the freedom to make their own choices. The subjects' enthusiasm for science class was overwhelming. Subjects reminded researcher when science class was to begin minutes before it was scheduled. Also, subjects asked researcher at various points in the day about their purchasing possibilities and what they would do in science class that day. Subjects offered and brought in many manipulatives to do experiments

with. This was a dramatic change in attitude from baseline and other observations.

Subjects' mean grade point average prior to Token Economy and curricular/environmental changes was low. It ranged from 73 to 90 with a mean of 72.2 (Ben was not a member of this class during this report period). After intervention, subjects' averages rose from a range of 61 (Ben) to 92 with a mean of 80.2 (Ben's average may also be attributed to his early leave in which his grade was formulated based on three out of six weeks of the report period). Therefore, "inappropriate behaviors ... interfered with academic instruction" (Salend, 1992, p. 204). Factors that possibly influenced this data include absences from school as well as in school and out of school suspensions. Also, on two separate occasions (sessions six and eleven), Karl, Andrew, Todd (three eighth grade students) were taught science without the seventh graders and earlier in the day (9:15 - 9:45 A.M.). Finally, Ben, one of the most disruptive students who had just recently been placed in this class, was pulled out and placed in a special school so that session eleven was the last observation of him. By mere absence of this subject, behavior probably improved as implied in verbalizations made by subjects, teacher, and aide.

There were some problems with this method. Although many Token Economy programs "demonstrated substantial reductions in inappropriate behavior ... when token programs were withdrawn, this behavior change was not maintained" (Turkewitz, 1975, p. 577). Appropriate fading techniques were employed, however,

subjects may not be able to maintain and generalize appropriate behavior to other settings as well as to the same class when modification is complete. Also, once subjects saw that they could not purchase some of the larger rewards, a few subjects began to "slack off" while others became discouraged about being one buck short for certain rewards.

True life does not provide rewards for every appropriate behavior exhibited. People do things because they are the right thing to do. This is, however, a higher level skill and developmentally, subjects may not yet have reached this point. Subjects need to make the transition from behaving accordingly to receive rewards, and behaving accordingly to receive society's approval. This may be the start of this transition for these students.

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Daily Baseline Checklist

Jeff

Todd

Scott

Tom

Mike

Karl

Art

Andrew

Ben

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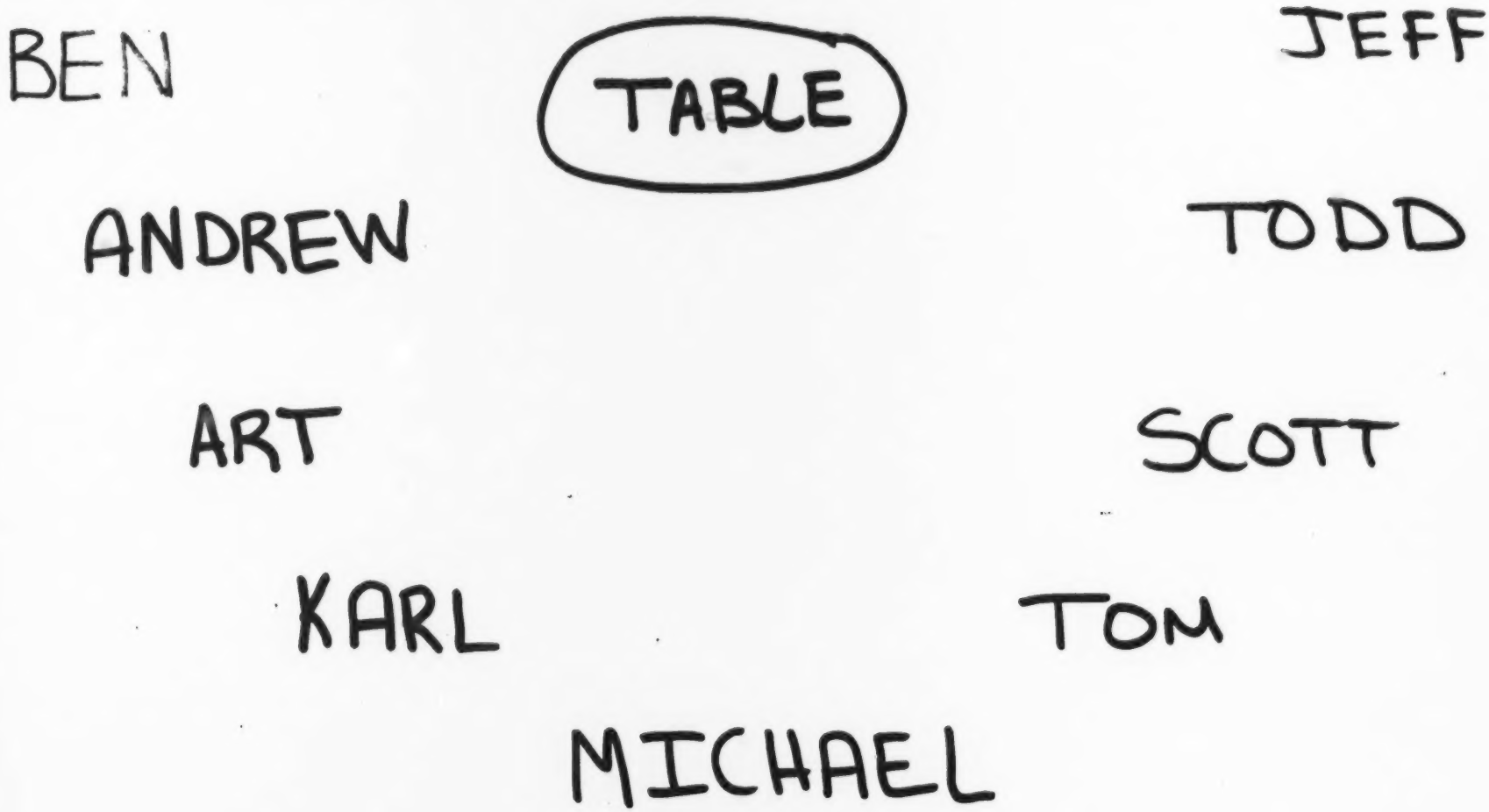
Figure A



16

17

Figure b

Behavior Contract

I _____ do promise to try and reduce the amount of Inappropriate Verbalizations (Call-Outs) I make each day in Science class (1:15 P.M. to 2:15 P.M.). I understand that I will begin with $10.00 each day, however, I will lose a $1.00 for each Call-Out I make in a day. Each day I will start new. I understand that I may use my money to purchase items from Stovers store (see attached). I understand that my money will be kept in The Bank which is posted in the room. I am aware of the rules of the game (see attached) I understand that Miss Stover will be writing down the number of call-outs I make during the class. I understand that this game takes place in room 101 only and only during science class I do, however, promise to practice this throughout the day in my other classes so I can earn $10.00 daily

Signature _____

Date _____

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Figure C

Inappropriate Verbalizations- Call-outs

To: Self, Partner, Class

1. Call-outs not related to science
2. Calling out answer when someone is answering
3. Uncontrolled Inappropriate Call outs that disrupt class - laughing/silliness for no reason, comments, talking under breath not related to suence
4. Out-loud conversations with partner, self or across class that is not appropriate
5. Anything that prevents me from teaching and you from learning.

Bottom line -

RAISE YOUR HAND!

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Figure D

Stover's Store

1. Pencils - $15.
2. Piece of Candy - $15.
3. Pretzel Stick - $15.
4. Walkman 20 minutes - do HW at home - $20.
5. Free Time - 20 minutes - $25 each
   - Reasonable Talk
   - Quiet at Desk
   - homework
   - hobby
6. Computer Time - 20 minutes - $30.
7. Animal Erasers - $35.
8. Bag of Chips/Pretzels - $40.
9. Soda - $50.
10. Candy Bar - $50.
11. Detention Pass for HW detention Mrs Butler's room ONLY. HW must be done by end of day. - $50.
12. Pizza + Soda Party - during science class - week of December 5 - December 9 - $100.

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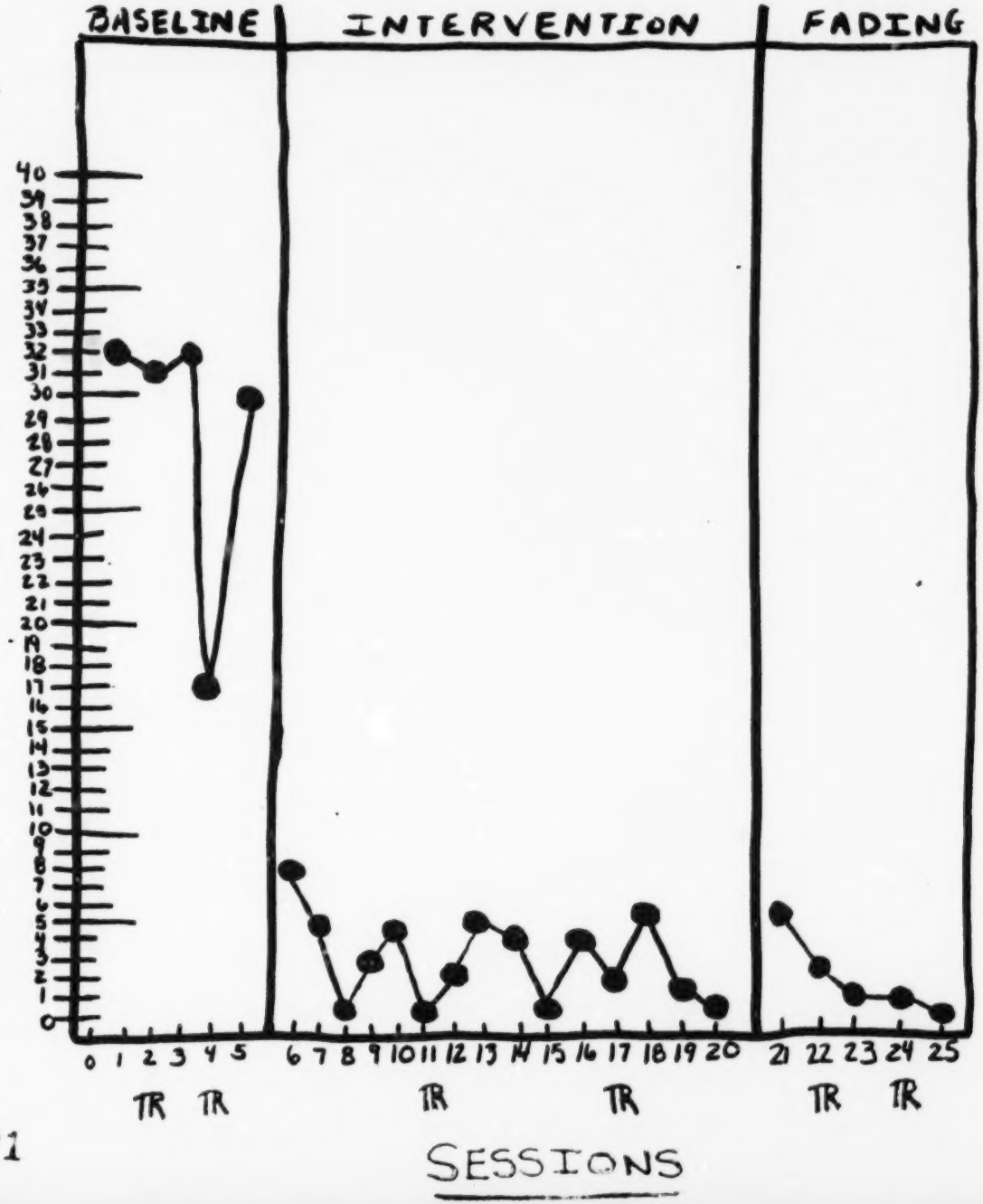
Name _____ 20 DATE _____

Figure E

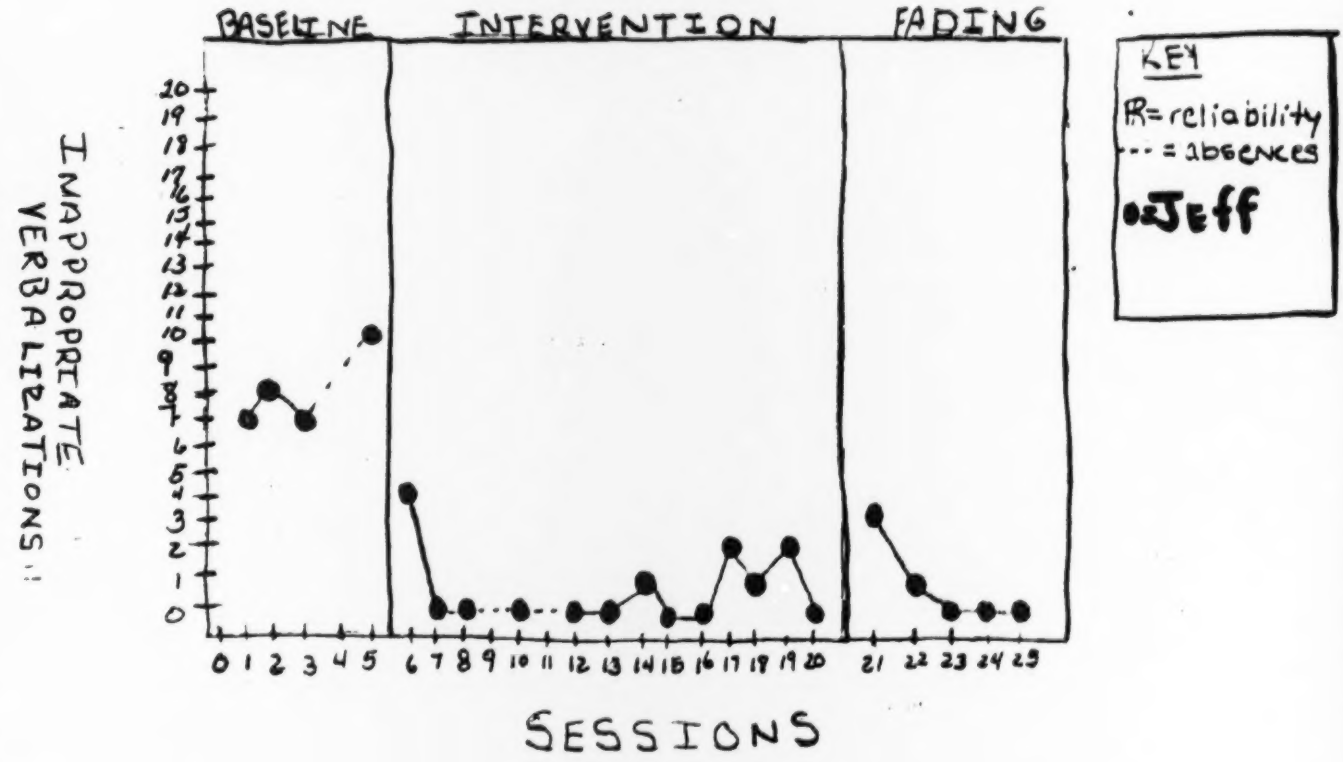

BASELINE
INTERVENTION
FADING
INAPPROPRIATE VERBALIZATIONS
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
TR TR TR TR TR TR
SESSIONS

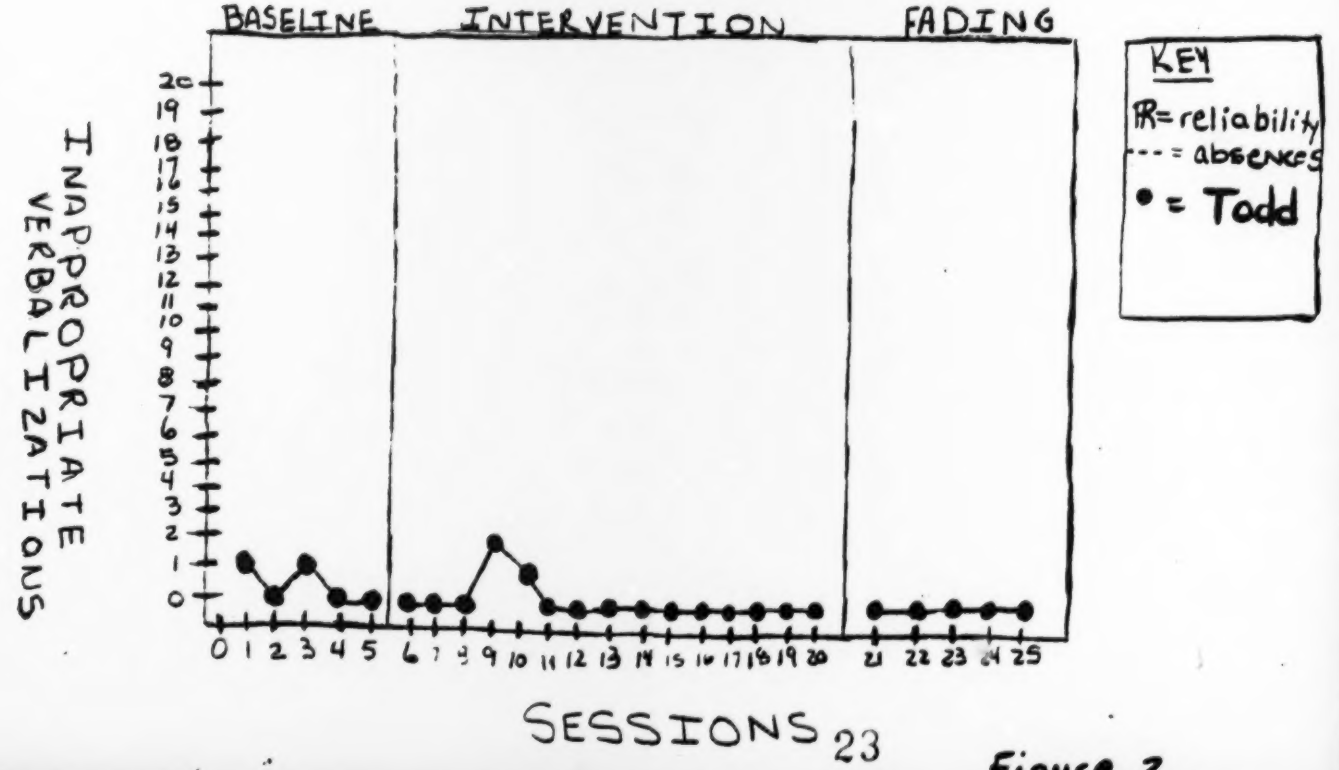
KEY

TR = reliability

------ = absences

Figure 1


BASELINE
INTERVENTION
FADING
INAPPROPRIATE VERBALIZATIONS
SESSIONS
KEY
R= reliability
--- = absences
•Jeff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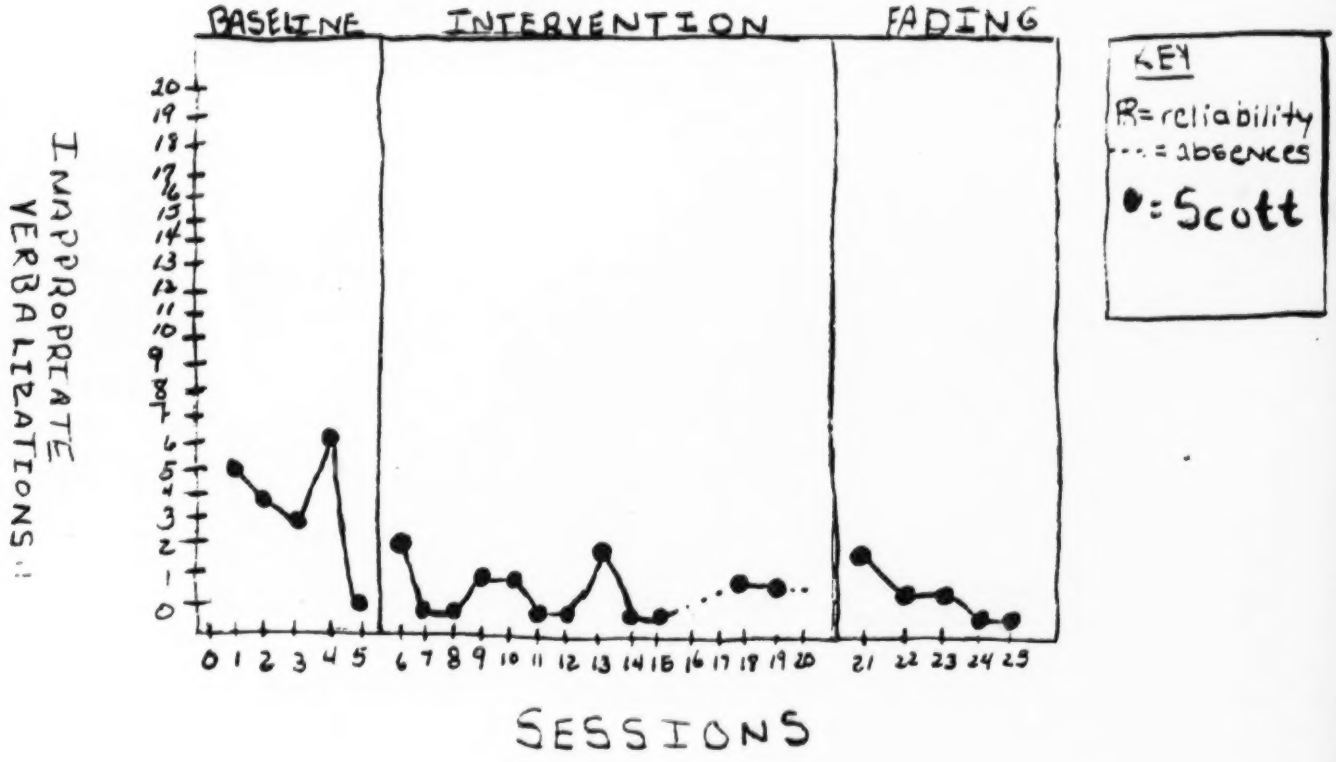
KEY
R= reliability
--- = absences
• = Todd

Figure 2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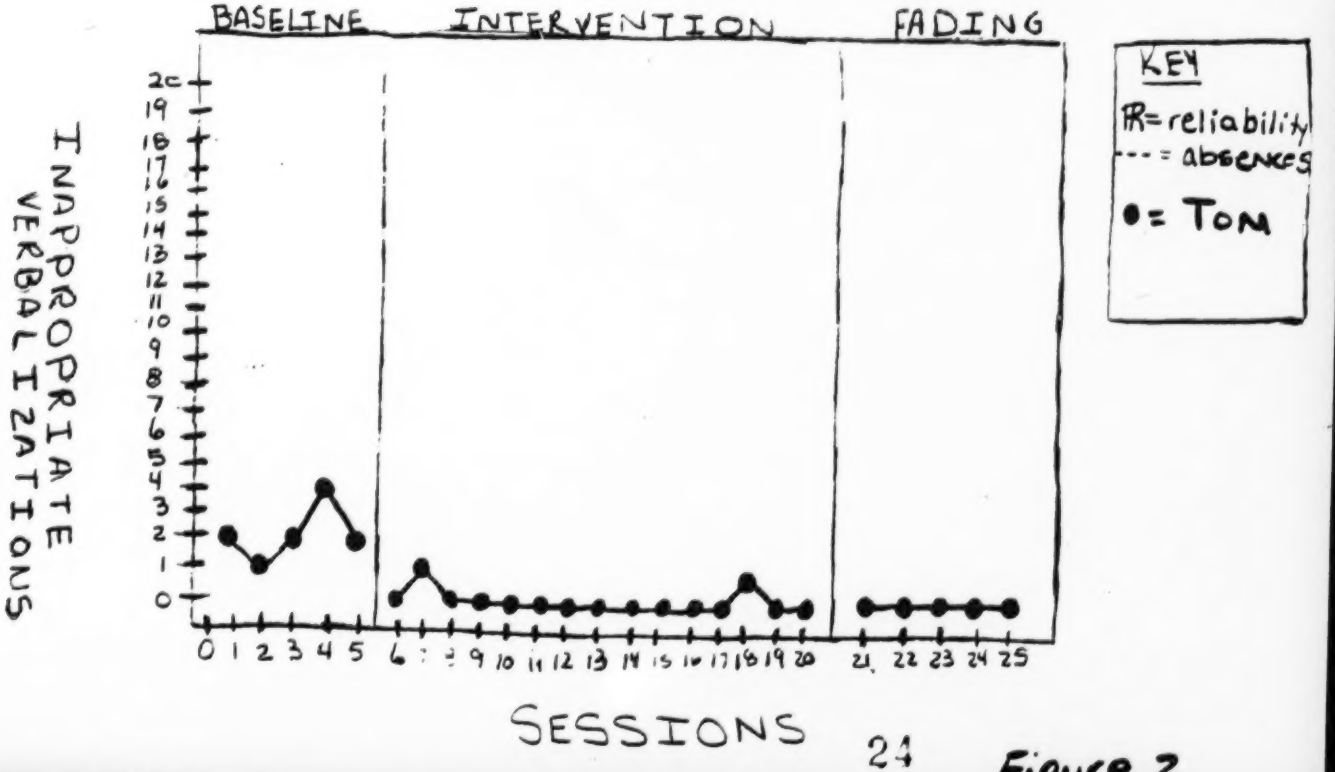
--- = absences
● = Scott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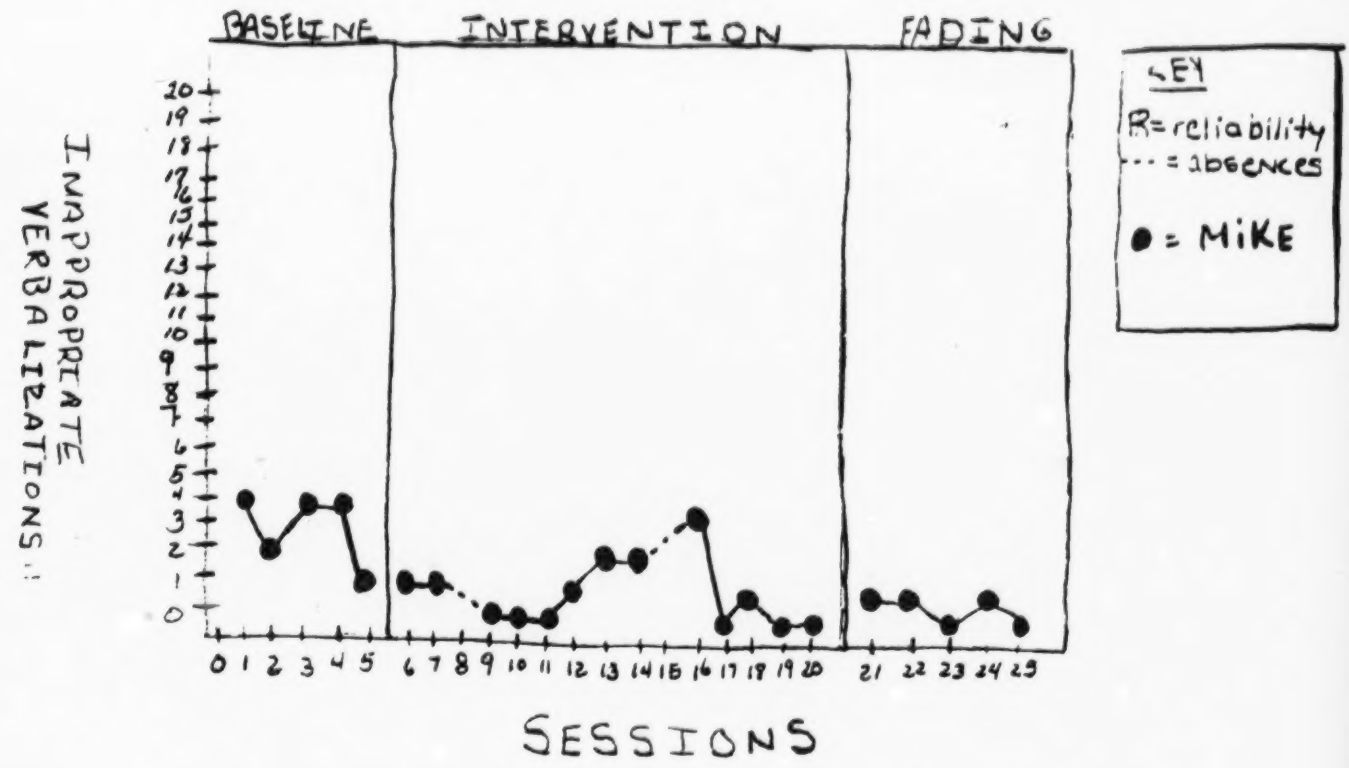
KEY
R= reliability
--- = absences
● = Tom

Figure 2


BASELINE
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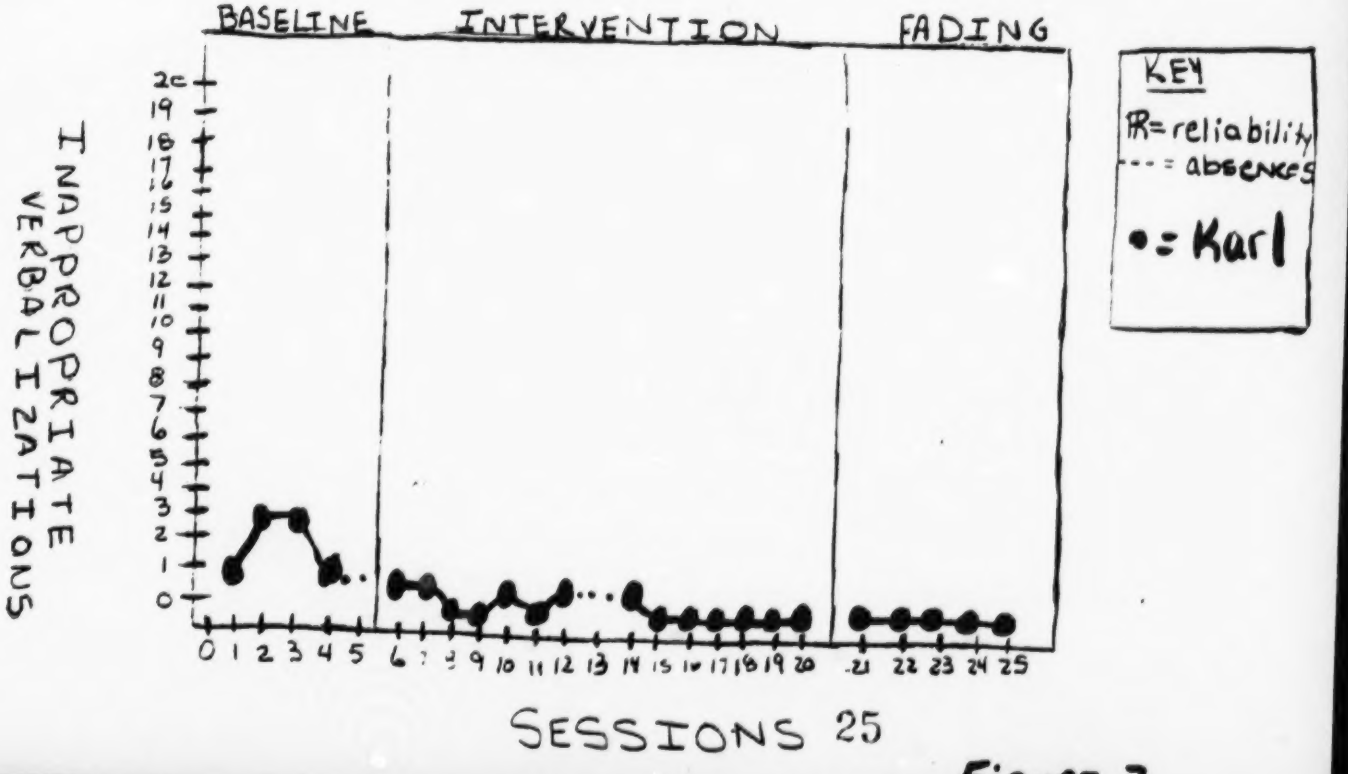
--- = absences
● = MIKE
INAPPROPRIATE VERBALIZATIONS
SESSIONS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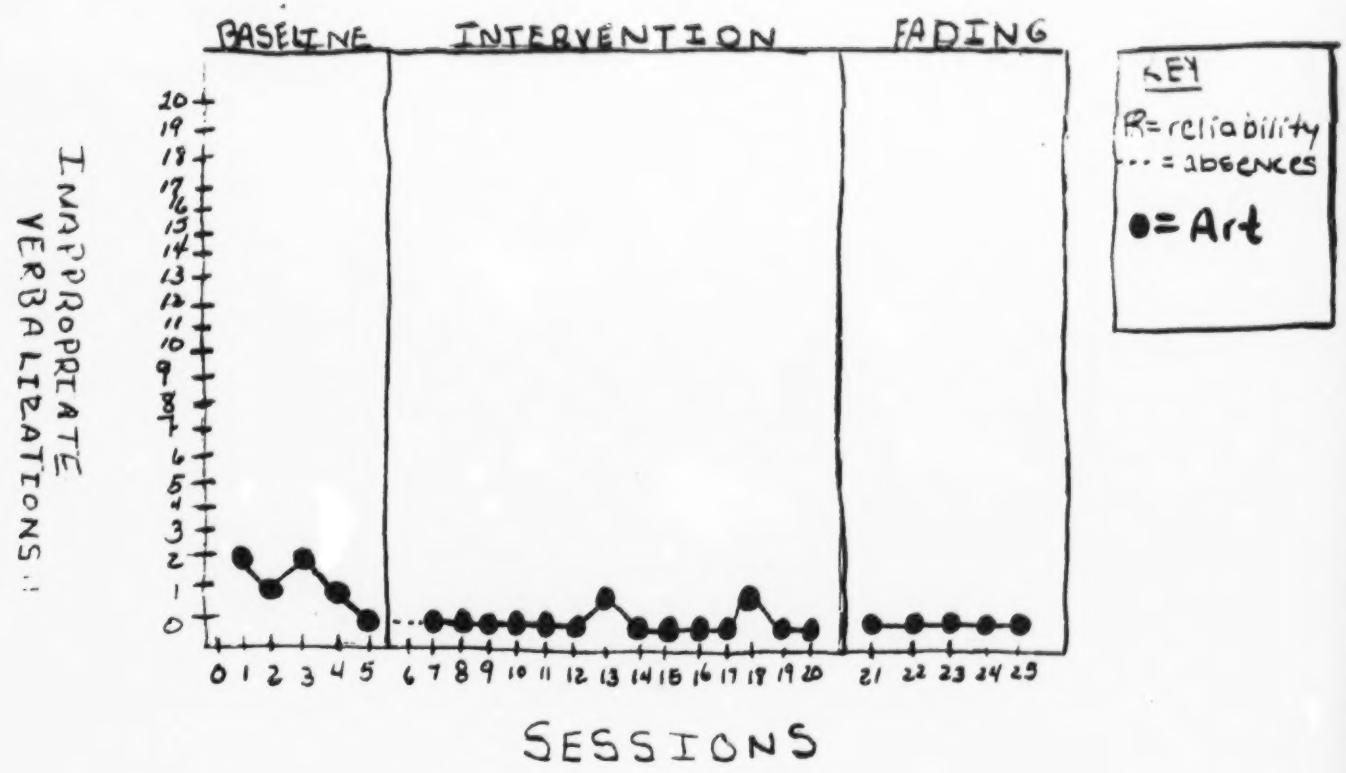
SESSIONS 25

Figure 2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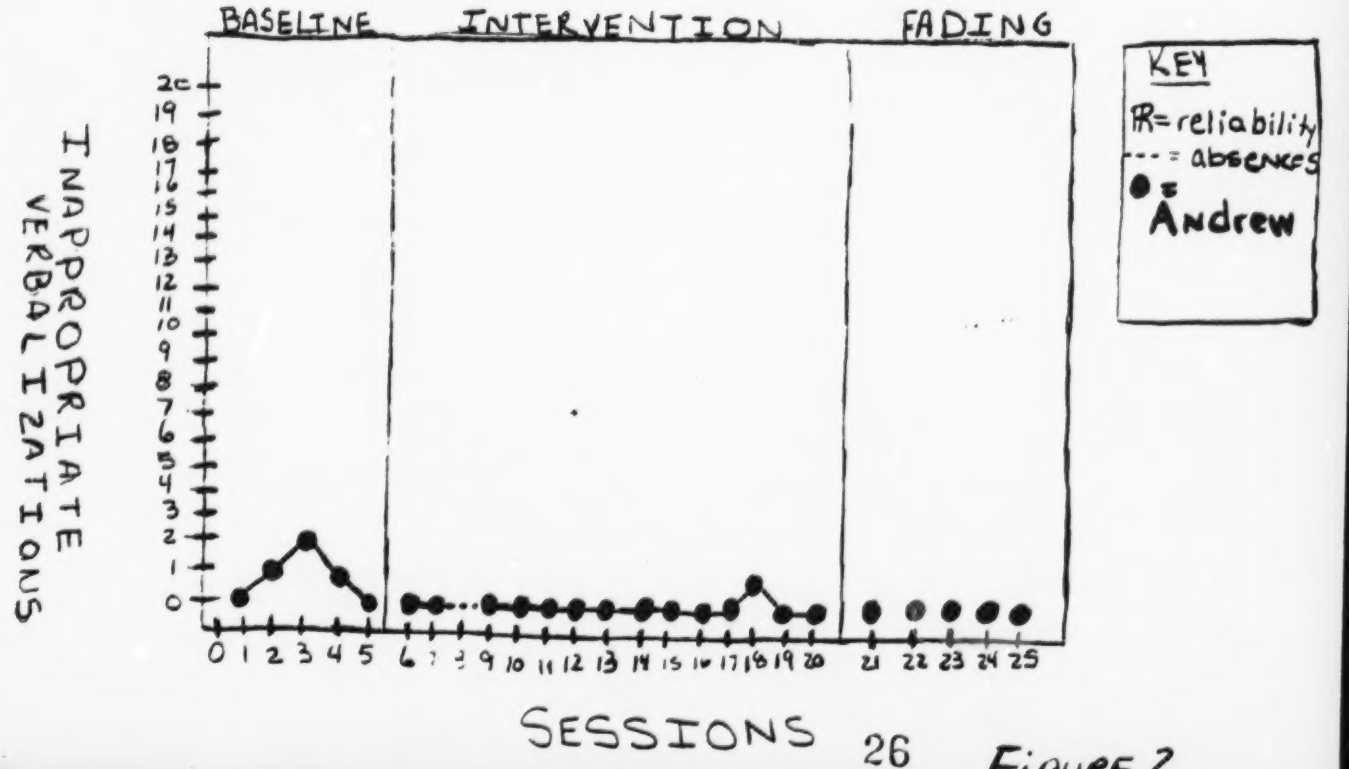
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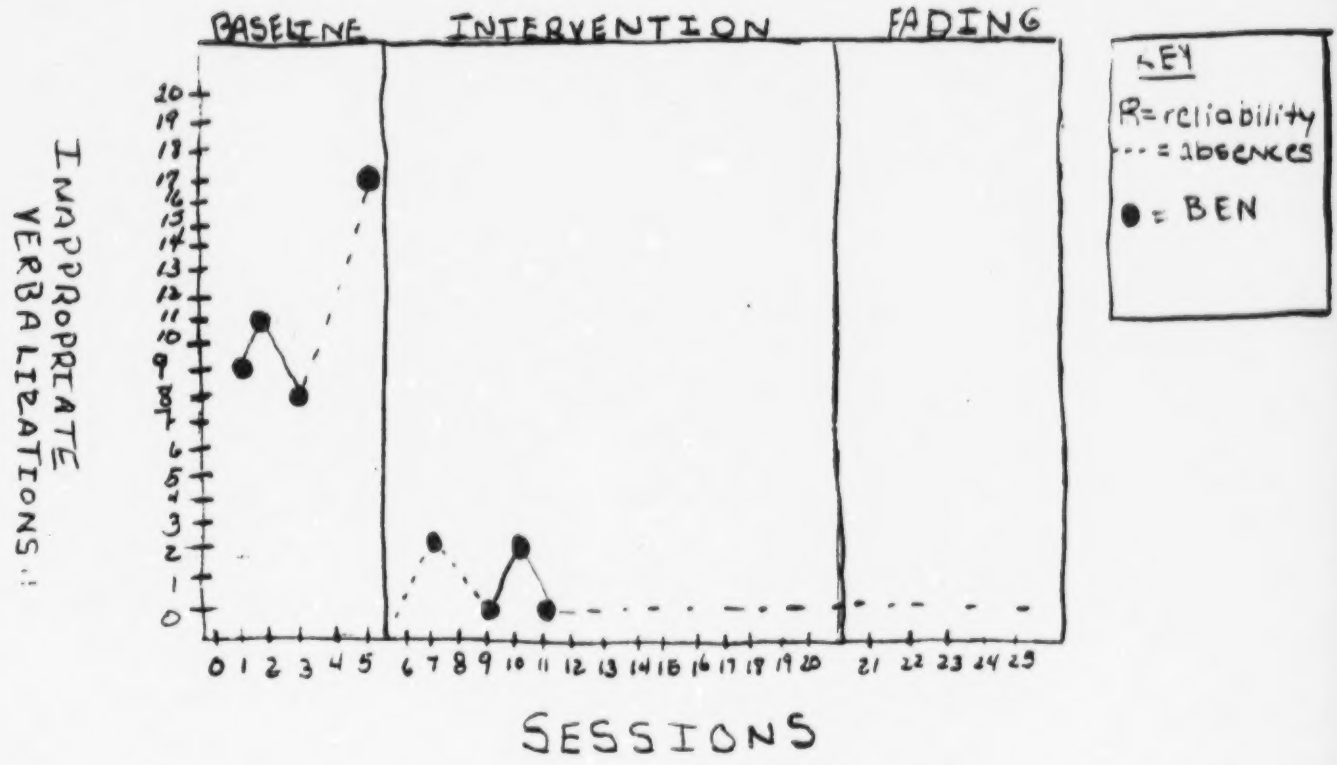
SESSIONS

Figure 2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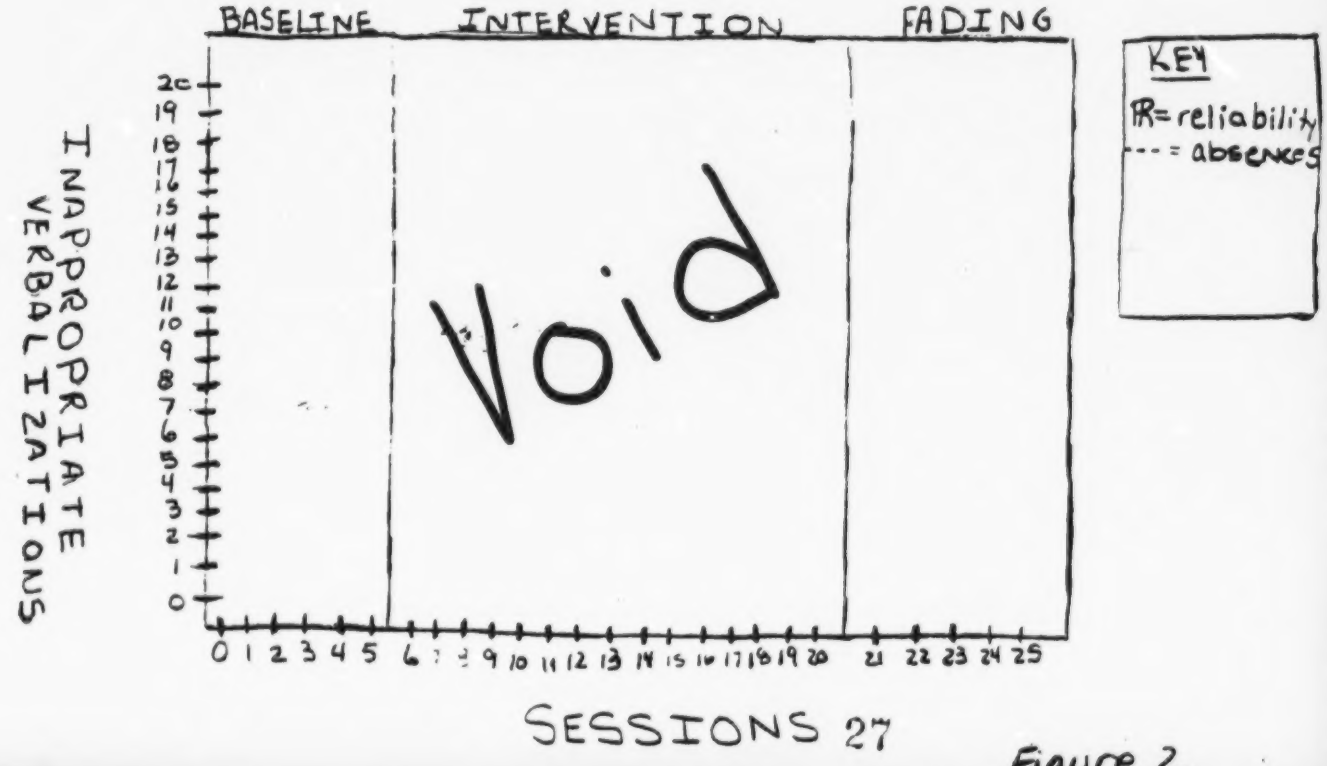
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KEY
R= reliability
--- = absences
Void
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SESSIONS 27

Figure 2